

2020 PARTICIPANTS' GUIDE

Integrating Adolescent Brain Development Into Child Welfare Practice With Older Youth

Handouts

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COMPETENCIES AND LEARNING OBJECTIVES: Integrating Adolescent Brain Development into Child Welfare Practice with Older Youth

Competencies:

- » Recognize how our own current beliefs and attitudes about adolescence impact our work.
- » Recognize how adolescent brain development influences adolescent thinking and behavior.
- » Recognize the link between early life trauma of abuse and neglect and how the adolescent brain development provides opportunities for healing.
- » Recognize the role of trauma and racism, and employ effective practices to help young people understand their experiences and develop effective strategies for healing and growth.
- » Consider socio-cultural assumptions and implicit biases when working with young people.
- » Recognize how youth development principles and practices can enhance outcomes for older youth.
- » Recognize the value of authentically partnering with young people.

At the completion of this training, participants should be able to:

- » Describe the transition outcomes of older youth in foster care.
- » Recognize how normal adolescent development is impacted by foster care placement.
- » Recognize how adolescent brain development influences adolescent thinking and behavior.
- » Identify how trauma effects brain development and impacts learning.
- » Apply brain science when interacting with young people by creating authentic partnerships.
- » Identify trauma informed strategies to support better outcomes for young people.
- » Identify strategies to change the way systems think about adolescence.
- » Recognize how youth development principles and practices can enhance outcomes for older youth.
- » Describe the importance of building social capital with older youth in foster care.
- » Describe helping older youth build social capital.
- » Describe using effective strategies that support healing and promote growth.
- » Describe the knowledge and skills needed to promote youth-adult partnerships.

HANDOUT: Letter to a Child

Dear _____,

Welcome to the world! I hope that you grow up to be _____. I want you to experience _____ and to always _____. I know that you will learn to _____ and will also _____.

My greatest hope for you is that _____.

I also want you to _____ and to be _____.

With Love,

HANDOUT: Reflections – Day One

1. What is one thing I can incorporate into my practice with young people to influence outcomes?
2. How can I incorporate this information into my practice with young people?
3. How can I share this information with the young people I work with?
4. What is one thing I can do to integrate the 3R's into my practice with young people?
5. What elements of being trauma-informed when planning with youth will I incorporate into my practice?

HANDOUT: Think Back

What were some of the positive memories you have of your older adolescence?

What were some of your worries during your older adolescence?

How did you learn some important life skills?

What was a risk you took or a new experience you tried that you learned from?

Throughout your older adolescence, were there significant people that supported you?

What kinds of support did you receive?

What motivated you during your adolescence?

What was your favorite song, book, show or movie during adolescence?

Think about a risk you took when you were an adolescent/young adult, what did you learn?

How did your network of support respond?

HANDOUT: Normal Developmental Tasks Required to Transition from Adolescence to Adulthood – Considering Experiences in Foster Care

ADOLESCENTS ARE EXPECTED TO...

Adjust to a new physical sense of self

Adjust to new intellectual abilities

Meet increased cognitive demands at school

Expand verbal skills

Develop a personal sense of identity

Consolidate the capacity to control impulses, calibrate risks and rewards, regulate emotions, project the self into the future and think strategically

Establish adult career goals

Gain emotional and psychological independence from parents

Develop stable and productive peer relationships

Learn to manage sexuality and a sexual identity

Adopt a personal value system

Develop increased impulse control and behavioral maturity

YOUTH WHO HAVE EXPERIENCED FOSTER CARE: WHAT IF...

I have grown to feel disconnected from my physical sense of self as a coping mechanism?

My need to focus on survival has overwhelmed or distracted my cognitive capacities?

Multiple moves and school changes prevent me from applying myself in school?

My stress responses have limited my ability and confidence to verbalize how I feel and what's important to me?

My experiences with adults have not validated that I matter? What if most people have just identified me as "a troubled child"?

I have not had the foundation or environment to develop and consolidate these skills?

I've been focused on survival — here and now, day to day — and not my future?

My bond and relationships with my parents were disrupted before I gained independence and interdependence?

The stability of my relationships with my peers has suffered because I am never in a place long enough to plant friendship roots?

I don't have someone safe to talk to about safe sex? What if I have been displaced from several homes based on my sexual or gender identity?

I have not had a consistent and loving relationship to help define a healthy, strong personal value system?

I haven't had the care, guidance and nurturing to teach and reinforce healthy control over my impulses so that my judgment and behavior mature with my development?

CULTURAL CONSIDERATIONS: WHAT IF...

I don't have a sense of who I am and almost every message I receive is negative?

I can't think clearly or take intellectual risks because of my sense of not being good enough?

I am disciplined more than my peers, which means I am often out of the classroom and will never catch up; so why try?

I don't feel like anyone wants to hear or believes what I have to say, so I just remain silent?

Every message I get from society tells me that as a youth of color or identifying as LGBTQ I am inferior?

My experiences have limited my capacity to look into the future? What if I see too many bad things that I don't understand happening to people who look like me? What if I am unsure that I will even have a future?

I have been in foster care for many years with no significant person in my life? What if all I can focus on is who will be there for me when I leave foster care?

I did not have the opportunity to bond with my parents and my experiences have primarily been in group placements?

I have not been placed with people who share my culture and values and no one has provided the opportunity for me to build these relationships?

No adult in my life shares my cultural background and context for such an intimate conversation?

I have always had to agree with someone else's value system, even though mine might be different?

I have been disciplined and restrained for behaviors that my peers were not?

Source: Labouvie-Vief, G. (2006). *Emerging structures of adult thought*. Washington, DC: American Psychological Association.
 Annie E. Casey Foundation. (2017). *The Road to Adulthood Aligning Child Welfare Practice with Adolescent Brain Development*.
www.aecf.org/resources/the-road-to-adulthood/.

HANDOUT: Quick Quiz

1. The pre-frontal cortex is the first part of the brain to develop. **True / False**
2. The pre-frontal cortex is the emotional center of the brain. **True / False**
3. During adolescence, the brain undergoes a pruning process. **True / False**
4. During adolescence, young people learn best through experiences. **True / False**
5. During adolescence, young people have lower levels of dopamine in their systems. **True / False**

HANDOUT: Glossary of Brain Terminology

Amygdala: Part of the brain's limbic system, this primitive brain structure lies deep in the center of the brain and is involved in emotional reactions, such as anger or fear, as well as emotionally charged memories. It also influences behavior such as feeding, sexual interest, and the immediate "fight or flight" stress reaction that helps ensure the person's needs are met.

Brain Stem: A primitive part of the brain that connects the brain to the spinal cord, the brain stem controls functions basic to survival, such as heart rate, breathing, digestive processes, and sleeping.

Cerebellum: A brain structure located at the top of the brain stem that coordinates the brain's instructions for skilled, repetitive movements and helps maintain balance and posture. Research suggests the cerebellum may also play a role, along with the cerebrum, in some emotional and cognitive processes.

Cerebral Cortex: The outer layer of the brain that plays a key role in memory, attention, perceptual awareness, thought, language and consciousness.

Complex trauma: The dual problem of exposure to multiple traumatic events and the impact of this exposure on immediate and long-term outcomes. For young people in foster care, examples of traumatic events may include poverty, neglect, physical and sexual abuse, separation from and loss of family, multiple moves and relationship disruptions.

Dopamine: A chemical in the brain that affects concentration, memory, problem solving and mental associations between action and pleasure.

Executive Function: Higher level cognitive functions, including decision-making and judgment, involved with the control of behavior.

Frontal Lobe: The front of the brain's cerebrum, beneath the forehead. This area of the brain is associated with higher cognitive processes such as decision-making, reasoning, social cognition, and planning, as well as motor control.

Gray Matter: The brownish-gray matter in the brain that is associated with intelligence and intellect. This type of brain tissue is composed primarily of cell bodies, along with their dendrites. The purpose of gray matter is to pass along sensory input, gathering information from the sensory organs and other gray matter cells and ensuring that it gets where it needs to go. The speed of communication is determined by the white matter, so one could think of the gray and white matter as the central processing unit of the brain.

Limbic System: The part of the brain associated with processing and managing emotion and motivation.

Myelin: The fatty substance that encases most nerve cell axons, helping to insulate and protect the nerve fiber and effectively speeding up the transmission of nerve impulses.

Neurobiology: The scientific study of the biology of the human brain.

Neuroplasticity: The ability of the brain to alter its structure in response to experience; the process by which the brain forms new neural pathways, removes old ones and alters the strength of existing connections.

Neurotransmitter: A chemical that acts as a messenger between neurons and is released into the synaptic cleft when a nerve impulse reaches the end of an axon. Several dozen neurotransmitters have been identified in the brain so far, each with specific, often complex roles in brain function and human behavior.

Normalcy: Typical experiences of growing up — from working a summer job to joining the school band and getting a driver's license — that are often out of reach for young people in foster care because of such factors as restrictive child welfare policies designed to keep children safe, frequent moves and the lack of funds and transportation.

Plasticity: In neuroscience, refers to the brain's capacity to change and adapt in response to developmental forces, learning processes, injury, or aging

Prefrontal Cortex: The part of the brain that governs a person's executive functions of reasoning, impulse control and advanced thought; the last part of the human brain to mature.

Pruning: A process in the brain through which unused or underused synapses are eliminated.

Sources:

Annie E. Casey Foundation. (2017). *The Road to Adulthood Aligning Child Welfare Practice with Adolescent Brain Development*. www.aecf.org/resources/the-road-to-adulthood/

Dana Foundation. (2019). *A Glossary of Key Brain Science Terms*. www.dana.org/wp-content/uploads/2019/05/dana-glossary-key-terms-2019.pdf

HANDOUT: Brain Building Strategies

Strategy	What does it look like in practice
Be consistent in your relationships with young people, emphasizing compassion, belief in their future and your high expectations of them.	
Be clear and honest about expectations and consequences if expectations are not met.	
Communicate high expectation for young people.	
Help young people understand and deal with the constant loss of caseworkers due to turnover and the loss of relationships with peers because of moves.	
Understand and talk with young people about what is going on in the brain and help them make sense of it.	
Have empathetic conversations with young people about experiences with racism or discrimination.	
Encourage and acknowledge the novelty experiences young people crave: visiting new places, being encouraged and allowed to go places on their own, learning to drive and falling in love for the first time.	
Provide brain-building experiences, which are “stretch” activities that must be slightly beyond reach, yet not unattainable. Reexamine preconceived notions about what a particular young person is ready to do.	

Source: Annie E. Casey Foundation. (2017). *The Road to Adulthood Aligning Child Welfare Practice with Adolescent Brain Development*. Retrieved from <http://www.aecf.org/resources/the-road-to-adulthood/>

CASE STUDY: Maria

Maria is 17 and in the 11th grade. She was placed in foster care at 12 after her mother was hospitalized following a suicide attempt. She has two younger siblings who are currently living with their maternal grandmother. Maria lived with them for a while but after a dispute with her grandmother, she was moved to a foster home. She wishes that she could spend more time with her sisters but her relationship with her grandmother remains strained and it's difficult for her to visit. Maria has been in four foster homes; she has been with her current foster family for almost one year.

She is on track to graduate on time despite having changed high schools multiple times. She earns A's and B's mostly, but has struggled in math. Her guidance counselor said she had been planning to attend college to study nursing or social work.

She has recently reconnected with her biological mother. They had sporadic contact over the years but her mom says that she is on medication and her mental health has stabilized. The two have been talking about moving into an apartment when Maria turns 18. She hasn't received much support from her foster mother in regard to moving in with her mother.

She has been described as outgoing and responsible but has recently been easily frustrated when asked to do routine chores in her foster home. She usually talks with her worker but recently has not been available when the worker calls or sends a text message. Her foster mother tells the worker that Maria has been staying out later than usual and doesn't share where she has been. She hasn't visited her siblings in several weeks and it seems that the only person she's been in regular contact with is her biological mom. She has begun cutting school and falling behind in her classes. She was involved with the theater club at school but she recently stopped participating. During recent meetings, she has shown little interest in planning for college and tells the worker that she's just "done" with high school and will figure something out once she graduates.

You are Maria's caseworker how would answer the following questions:

How would you support relationship building with Maria?

What are some examples of "hot cognition" moments Maria has experienced?

What are some motivating factors influencing Maria's behavior?

HANDOUT: Definitions

Youth Development:

Positive Youth Development or PYD is an intentional, prosocial approach that engages youth within their communities, schools, organizations, peer groups, and families in a manner that is productive and constructive; recognizes, utilizes, and enhances young people's strengths; and promotes positive outcomes for young people by providing opportunities, fostering positive relationships, and furnishing the support needed to build on their leadership strengths (Interagency Working Group on Youth Programs, <https://youth.gov/youth-topics/positive-youth-development>).

Quality Services:

Services in such areas as education, health, employment and child welfare which exhibit:

- » relevant instruction and information
- » challenging opportunities to express oneself, to take on new roles, and be part of a group
- » Supportive adults and peers who provide respect, high standards and expectations, guidance and affirmation to young people.

Opportunities: chances for young people to learn how to act on the world around them. They are given opportunities to test out ideas and behaviors and experiment with different roles. The roles must be perceived as challenging and legitimate to young people. These are tasks that are taken on and done by the young person not things that are done to them.

Supports: interpersonal relationships that allow the young person to take full advantage of existing services and opportunities. There are three types of supports; emotional, motivational, and strategic.

Supports take on various forms but they **must** be affirming and respectful, ongoing, and offered by a variety of people. Supports are done with young people rather than for them.

HANDOUT: Brief Bio of a Young Person

AGE:

GENDER IDENTITY:

RACE/ETHNICITY:

PERMANENCY GOAL:

STRENGTHS:

CHALLENGES:

HANDOUT: Brain-Friendly Interventions

Intervention	Strategies for Young People in the Child Welfare System
<p>Opportunities to Choose: young people need frequent occasions to make significant choices to help develop the decision-making regions in the “reasoning brain” (the prefrontal cortex)</p>	
<p>Self-Awareness Activities: young people experience an acute sense of self-consciousness and are actively building an inner core identity during adolescence (another prefrontal cortex function)</p>	
<p>Peer Learning Connections: young people prefer the company of their friends to being with adults (e.g. parents, teachers, or other authority figures); areas of the brain associated with emotional distress light up in brain scan studies if teens are socially rejected</p>	
<p>Affective Learning: the “emotional brain” (limbic system) is going full throttle by early adolescence while the “reasoning brain” (prefrontal cortex) is still being installed; the young person learns more effectively when there is emotional content to accompany a lesson or other learning topic</p>	
<p>Metacognitive Learning: this refers to “thinking about thinking” or the capacity to use the mind to regulate its own processes through planning, goal-setting, reflecting on one’s past experience, and other self-regulating mental activities; this area is developing throughout adolescence as a prefrontal cortex function</p>	
<p>Expressive Arts Activities: the highly developed “emotional brain” is primed to creatively express itself, while the still-developing prefrontal cortex function of “inhibition” is not censoring these creative ideas as much as it will in adulthood, so this is a critical period for creative and artistic activities</p>	
<p>Real Life Experiences: young people can reason like adults by age sixteen but only if there are no emotional or peer influences (a condition called “cold cognition”); real life learning provides an appropriate setting within which they can be challenged to make good decisions in the midst of social or emotional pressures (a condition termed “hot cognition”)</p>	

Adapted from Thomas Armstrong Seven Adolescent Brain-Friendly Interventions retrieved on 9/9/19 from <https://www.institute4learning.com/resources/>

HANDOUT: Seven Adolescent Brain-Friendly Interventions

- 1. Opportunities to Choose:** young people need frequent occasions to make significant choices to help develop the decision-making regions in the “reasoning brain” (the prefrontal cortex); strategies include:
 - » Opportunity to participate in their transition planning conferences, leadership events.
 - » Listen carefully to a young person’s opinions regarding planning for their future.
- 2. Self-Awareness Activities:** young people experience an acute sense of self-consciousness and are actively building an inner core identity during adolescence (another prefrontal cortex function):
 - » Encourage young people to keep reflection journals, have them write or create their own autobiographies.
 - » Encourage mindfulness meditation for youth, respect their need for privacy, encourage personal exploration through writing, photography or another medium.
- 3. Peer Learning Connections:** young people prefer the company of their friends to being with adults (e.g. parents, teachers, or other authority figures); areas of the brain associated with emotional distress light up in brain scan studies if teens are socially rejected:
 - » Provide opportunities for peer learning through after school activities
 - » Provide opportunities for youth leadership within the agency.
 - » Create a peer-friendly place for young people to bring their friends.
 - » Avoid being critical of a young person’s choice of friends
- 4. Affective Learning:** the “emotional brain” (limbic system) is going full throttle by early adolescence while the “reasoning brain” (prefrontal cortex) is still being installed; the young person learns more effectively when there is emotional content to accompany a lesson or other learning topic:
 - » Be emotionally supportive of young people
 - » Help youth regulate his/her own feelings (through reflection, stress reduction tools etc.); provide a safe space within which young people can experience a wide range of emotions without being judged, integrate laughter and fun
- 5. Metacognitive Learning:** this refers to “thinking about thinking” or the capacity to use the mind to regulate its own processes through planning, goal-setting, reflecting on one’s past experience, and other self-regulating mental activities; this area is developing throughout adolescence as a prefrontal cortex function:
 - » Teach young people about brain development,
 - » Ask open-ended questions,
 - » Help young people learn how to set realistic goals
- 6. Expressive Arts Activities:** the highly developed “emotional brain” is primed to creatively express itself, while the still-developing prefrontal cortex function of “inhibition” is not censoring these creative ideas as much as it will in adulthood, so this is a critical period for creative and artistic activities:
 - » Encourage young people to explore their own creativity through art, writing, multimedia projects, dance, theater through involvement in community or school activities.
- 7. Real Life Experiences:** young people can reason like adults by age sixteen but only if there are no emotional or peer influences (a condition called “cold cognition”); real life learning provides an appropriate setting within which they can be challenged to make good decisions in the midst of social or emotional pressures (a condition termed “hot cognition”):
 - » Provide access internship programs, apprenticeship programs, job shadowing days, community or service-based learning programs.
 - » Pace the teaching of life skills and look for opportunities where young people can practice skills in a safe environment.
 - » Encourage young people to volunteer with a community-based organization

HANDOUT: Reflections – Day Two

1. What specific brain friendly interventions can I incorporate into my practice with young people?

2. How can I incorporate a positive youth development philosophy into my practice with young people?

3. How can I move towards working with young people as resources and partners?

HANDOUT: How We View and Approach Young People



Being viewed as Objects

When youth are viewed as objects, the worker has little value for them and has ultimate control over the case. A less extreme view is that the worker knows best and young people are the objects of our good intentions. There is little room for family input or for inclusion of their ideas. This view is worker driven, and values compliance and policy. For young people it creates the sense that things are being done **“to”** them.

Being viewed as Recipients

This view puts emphasis on young people benefiting from the services offered. Workers include youth participation in the planning process, but with the focal point on how the youth will benefit from the service. There is no focus on what resources the youth has to offer and the worker is in control of the conditions for participation. There is some opportunity for building a sense of ownership in the decision-making process. This viewpoint creates the feeling that things are being done **“for”** the youth by the worker who knows best.

Being viewed as Resources/Partner

When youth are viewed as resources and partners, it is based on a respect for the contributions they can make to their case plan as well as contributions for system wide improvement. Decision-making and leadership roles are shared between youth and workers. This is created when workers, along with youth, learn the attitudes and skills needed for shared leadership and decision-making. It creates the feeling of doing **“with”** for both workers and youth.

From Lofquist, W.A. (1989). *The technology of prevention workbook*. Tuscon, AZ: Associates for Youth Development.

HANDOUT: Language Matters in Building Partnerships

Instead of...	Try...	How does this contribute to partnership?
"Kids" or "kiddos"		
"I think you should..." "You need to..." "You should..."		
"Have you tried..." "What if you..."		
"The youth I deal with..."		
"I don't think that's a good idea." "There's no way a judge is going to let that happen, so let's just drop it."		

Source: Jamie Bennett (2019) developed for Jim Casey Youth Opportunities Initiative.

HANDOUT: Language Matters in Building Partnerships – Strategies

Instead of...	Try...	How does this contribute to partnership?
"Kids" or "kiddos"	Young people, youth, young adults	-Addresses hierarchal power language that exists between children and adults. -Acknowledges the developmental stage of adolescence.
"I think you should..." "You need to..." "You should..."	"What do you think we should do?" "What is the first thing that needs to happen to move forward?"	-Acknowledges that youth are experts of their experiences and have solutions. -Invites partnership in addressing challenges. -Provides opportunities for experiential learning.
"Have you tried..." "What if you..."	"What have you already tried?"	-Acknowledges that young people have agency and resiliency to engage in problem solving. -Prompts part problem solving in partnership rather than fixing.
"The youth I deal..."	"The youth I support..."	-Communicates a strengths-based, positive view of youth. -Acknowledges that challenging behavior is often self-protective and a coping mechanism.
"I don't think that's a good idea." "There's no way a judge is going to let that happen, so let's just drop it."	"What are the things that are out of our control and in our control regarding this idea?" "I honestly do not know if that can happen. If this idea doesn't work out what is an idea we can work on for a plan B?"	-Engages youth in decision making about their future -Provides opportunities to build skills of problem solving, contingency planning, and coping with things that are outside of the control of the youth and worker.

Source: Jamie Bennett (2019) developed for Jim Casey Youth Opportunities Initiative.

HANDOUT: Youth/Adult Partnerships: Self-Assessment Tool

This is not a test! Rate yourself on a scale from 1- 5, “one” being a beginner in this area. In the first column, put where you see yourself now. In the second column, put where you would like to be.

Where I am now.	Where I would like to be”	
_____	_____	Familiar with adolescent brain science and work in partnership to build brain gains.
_____	_____	Affirm and support people’s feelings and ideas.
_____	_____	Treat all group members with respect.
_____	_____	Appreciate and incorporate the strength of similarities and difference among people (gender, spiritual, class, etc.).
_____	_____	Resist the urge to take over.
_____	_____	Careful about interrupting people of all ages.
_____	_____	Provide opportunities to have youth reflect and learn.
_____	_____	Believe in the potential and empowerment of all youth.
_____	_____	Trust youth to be powerful contributors.
_____	_____	Ability to identify positive possibilities in difficult situations.
_____	_____	Listen carefully to people of all ages.
_____	_____	Get involved and provide support when a young person puts down or devalues another or themselves.
_____	_____	Seek to learn from people.
_____	_____	Expect youth to make their own decisions.
_____	_____	Say something where young people’s rights and due to respect are being denied or violated.
_____	_____	Celebrate people’s success.
_____	_____	Advocate for improvement of youth / adult partnerships in teams, organizations, and communities.

Source: Adapted from Innovation Center for Community and Youth Development, A Division of National 4-H Council 7100. www.fourhcouncil.edu/cyd
www.naesp.org/sites/default/files/resources/1/A_New_Day_for_Learning_Resources/Moving_Ideas_to_Action/BuildingCommunity_ToolKit.pdf



HANDOUT: Action Plan

As a result of this training I have acquired the following new knowledge, skills and attitudes:

As a result of this training I am going to discuss the following learning strengths and needs with my supervisor:

As a result of this training I am going to do the following or make the following specific changes using the new knowledge, skills and attitudes in the next month:

APPENDIX: Quick Quiz – Answer Key

1. The pre-frontal cortex is the first part of the brain to develop. **FALSE**
 - » The brain develops from the back to the front and from the inside out.
2. The pre-frontal cortex is the emotional center of the brain. **FALSE**
 - » The prefrontal cortex is the part of the brain associated with self-regulation, logic, critical thinking and long-term planning. Young people gradually begin shifting from making decisions based on impulse and emotion from the limbic system and rely more on the prefrontal cortex when making decisions and navigating their worlds.
3. During adolescence, the brain undergoes a pruning process. **TRUE**
 - » During adolescence, the brain is pruning away the grey matter that exists between different parts of the brain, which clears for more efficient pathways for synapses to connect and improve communication between cells and different parts of the brain. During adolescence, as many as 30,000 synapses may be lost per second over the entire cerebral cortex. As unused synapses are pruned away, other neurons are being strengthened. The strengthening of neuro-pathways is process is called myelination. What is being reinforced/acted upon is strengthened (myelination) and what is not reinforced or used is being pruned away. This is the prime time for adolescents to wire their brains in positive ways – to “use it and improve it.”
4. During adolescence, young people learn best through experiences. **TRUE**
 - » Young people’s brains are extremely malleable during adolescence. They are primed for learning and extremely sensitive to their environment, interactions with others and experiences. The skills that adolescents are developing in the prefrontal cortex are developed through experiences and need consistent reinforcement to solidify the learning and growth.
5. During adolescence, young people have lower levels of dopamine in their systems. **FALSE**
 - » During adolescence, young people have the highest levels of dopamine in their system than you do in either childhood or adulthood. Dopamine is a chemical that links action to pleasure. Adolescents naturally seek new excitement through experiential learning and trying new things (taking risks). These heightened levels of dopamine also contribute to the “reminiscence bump,” meaning experiences we have during adolescence stick with us farther into adulthood. Heightened levels of dopamine paired with a “still developing” prefrontal cortex gives scientific rationale for why young people still give in to impulse and are most focused on instant gratification as opposed to long term planning.

